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EUI Working Paper SPS No. 92/23

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**EUROPEAN UNIVERSITY INSTITUTE, FLORENCE**

DEPARTMENT OF POLITICAL AND SOCIAL SCIENCES



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Printed in Italy in July 1992
European University Institute
Badia Fiesolana
I – 50016 San Domenico (FI)
Italy

# The Autopoiesis of the Cold War: An Evolutionary Approach to International Relations?

by

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(Prepared for delivery at the 1992 Annual Meeting of the American Political Science Association, The Palmer House Hilton, Chicago, September 3-6, 1992.)

## Introduction

1

I spent the fall and winter 1989 in Athens, Ohio, in order to study contemporary history at Ohio University. I was far away from Berlin, then, when the Berlin Wall was opened in early November. CNN reported "live", and I remember pictures showing numerous East-German cars -- *Trabbis* -- crossing what was as yet a border. I remember pictures showing young people dancing on the wall which only a few days ago separated them. I did not watch much of these pictures, though, and I did not feel like celebrating. Somehow I was concerned, and I still find it difficult to express about what. Not so much about new security orders in Europe or elsewhere, not about a too powerful Germany or the future of the Warsaw Pact. Instead, I was concerned about the tragedy behind the question of how it was possible that 45 years of deadly seriousness could be turned into lightness, easiness, even happiness over night. For **if** this was possible, then what was the meaning of all that seriousness, which I -- as so many of us -- intended to study with a similar kind of seriousness?

It is this confusion, this uneasiness, this doubt which bars my way to the easy answers: power comes and goes, superpower rivalries come and go, etc. Instead, the question must be: **What is the meaning of the Cold War in a context of social evolution?** Therefore: How does one conceptualize social evolution? And, on that basis: What **was** the Cold War? These should be the question-marks of this essay.[1] At first, this essay must face, then, the highly irrelevant and therefore lonely task of designing a general framework potentially capable of describing all aspects of social evolution. From the outset, the task is paradoxical: whatever this framework will look like, it will itself be a result of social evolution and thus, as a **general** framework, must incorporate itself. In other words, the claim to universality must make a theory, framework, concept -- self-referential. The theory somehow must re-discover itself as one of the phenomena it was supposed to cover; it must re-enter the framework it constitutes. It must be **circular**. Clearly, in an intellectual environment which denies circular reasoning the quality of being "empirical", any attempt to pursue this project despite of its circularity must be seen sceptically and may even provoke hostility. And yet the alternative would be to **artificially** exclude aspects of the social world and then to study a phenomenon, e.g. the Cold War, from an artificially restricted perspective, which, in most cases, is not aware of its restrictions. The latter strategy has been predominant in the history of thought for the last centuries, perhaps because of its self-propelling effect: the restrictions of one perspective can be observed from another perspective which thereby produces other restrictions which, too, can be observed and so on. In a sense, a self-referential theory design will stand outside of this tradition -- not because it can see everything (it cannot), but because it can theorize about its restrictions within itself.

[1] This essay summarizes a longer paper -- "The Autopoiesis of International Relations" -- I wrote for the European University Institute. It contains ideas in progress and should be seen as a starting point rather than as a final result of a research project.

3

But how can it be done? What does a theory look like which can theorize about itself? A concept which conceptualizes itself? How does one design a **recursive** framework of social evolution? Not accidentally, what appears as a problem is at the same time its solution. If the theory generalizes its own problem -- how to unfold out of circularity, out of paradoxes -- and regards it as **the** constitutive problem of reality in general, then at least for the theory, the problem disappears. If the theory interprets what it is supposed to interpret as phenomena which evolve on the basis of a circle, and if it then theorizes about how this is possible, it will by implication theorize about itself. As the theory grows -- if it grows -- it provides ample evidence of the productive power of circularity, of tautologies, and paradoxes -- a theme which is central to this essay. A theory which follows these guidelines will interpret the world from a highly peculiar perspective. For a circle refers to everything and nothing. Circles imply arbitrariness: they do not dispose of preferred directions, and any of their points is as good or bad as anyone else. The theory's task is then to describe or, if you will, to explain how self-referential systems nevertheless exist; how they can determine their immediate future despite of circular arbitrariness. If everything is possible, then the problem is to delineate how self-referential systems do what they do and nothing else. The problem is to explain how in a world of principally infinite possibilities trains depart and arrive on time, newspapers are printed every day, laws are enacted, children educated, conferences held and students burdened with seminar papers. From this viewpoint, nothing can be taken as given. For a theory which consistently employs this perspective, **existence** is inherently paradoxical because whatever exists, exists despite of or because of the paralysing arbitrariness of its underlying self-reference.

4

All this amounts to a tremendous challenge, which, to my knowledge, only *Niklas Luhmann* has taken up. If there is a common problematic behind his writings, then perhaps the previous two paragraphs may be read as an attempt to pinpoint its

essence.[2] This essay, somewhat dogmatically, first introduces and then adopts *Luhmann*'s perspective. It understands the social world as made up of self-referential, **autopoietic** social systems. Rather than to review the critical literature, to reflect upon and justify the assumptions behind this perspective, I prefer to outline some of them (part I) and then to build up on them until I arrive at a framework (part II) complex enough to reflect on the meaning of the Cold War and its end (part III). It is not only the peculiarity of *Luhmann*'s perspective, but also the peculiarity of the question this essay started with which prescribes that, at first, the Cold War disappears from the following pages until the essay has become complex enough to refer to it. Thus, this essay requires patient readers who can wait and read until all the apparently separate terms and pieces in this essay will finally (and hopefully) merge to a substantial whole -- to a theme -- at the end.

[2] I am not aware of an up-to-date bibliography of *Luhmann*'s writings. A bibliography collected in 1987 lists 264 entries. See Dirk *Baecker*, Jürgen *Markowitz*, Rudolf *Stichweh*, Hartmann *Tyrell*, Helmut *Willke* (eds.), Theorie als Passion, (Frankfurt a.M.: Suhrkamp, 1987), pp.720-737.

## Part I: Basic Assumptions of Autopoiesis

1

Autopoietic systems are systems which produce the preconditions of their own existence.[3] And it is this very activity of production and reproduction from products which defines the system and its unity. In particular: the system produces its last components which are, at least for the system itself, undecomposable. These components are also called the system's **elements**. As a consequence, everything which is used by the system as a unit is produced by the system itself: elements, processes, boundaries, structures, and last but not least the unity of the system itself. Thus, being a system is not a consequence of one general decision about the existence or non-existence of unity with specific characteristics, but instead an **activity**. The system chooses between continuation and end of reproduction of its elements via relational arrangements of those elements.

2

Autopoiesis is a Greek word and means "self-production".[4] Yet "self-production" or "self-reproduction" is not the theme around which the theory of autopoiesis is

[3] For a short and dense summary of what follows see Niklas *Luhmann*, The Autopoiesis of Social Systems, in Felix *Geyer*, Johannes *van der Zouwen* (eds.), Sociocybernetic Paradoxes: Observation, Control and Evolution of Self-Steering Systems, (London: Beverly Hills, 1986), pp.172-192. For an extensive treatment see Niklas *Luhmann*, Soziale Systeme: Grundriß einer allgemeinen Theorie, (Frankfurt a.M.: Suhrkamp, 4th ed. 1991).

[4] The term was first used by Humberto R. *Maturana* and Francesco J. *Varela* as a title for their theory of the organization of life. See their Autopoiesis and Cognition: The Realization of the Living, (Dordrecht: Reidel, 1980). For a summary see Humberto R. *Maturana*, Autopoiesis, in Milan *Zeleny* (ed.), Autopoiesis: A Theory of Living Organization, (New York: North Holland, 1981), pp.21-30. For a critique of their concepts and the application of these concepts to the social sciences see e.g. Danilo *Zolo*, The Epistemological Status of the Theory of Autopoiesis and its Application to the Social Sciences, in A. *Febbrajo*, G. *Teubner* (eds.), State, Law, Economy as Autopoietic Systems: Regulation and Autonomy in a New Perspective, (Milano: Giuffrè, forthcoming). However, as even *Zolo* recognizes, a critique of *Maturana* and *Varela* cannot automatically be a critique of *Luhmann*; and this not only because the latter frequently points to differences between him and the two Chilean biologists.

formed. In particular, the theory does not contain an hidden bias stating that systems always have an interest in self-preservation; a system may well maintain structures containing conditions of its own dissolution. Instead, it seems much more appropriate to mark "self-reference" as the central concept of the theory. For it is self-reference which defines or, more appropriate, which **is** the unity of a system. In a system, elements refer to themselves via other elements; the totality of those references and self-references represents a system. Any attempt to precisely delineate the relation between system and elements must inevitably experience the limits of a language which only allows for verbs that refer to (other) substantives. The relation between system and elements is not a "contained in" or a "whole-part" relation because, without the system -- without the "whole" --, the elements -- the "parts" -- would not exist. The system is involved in the very definition of the elements. The system produces the elements and provides the opportunity for them to exist and to operate for an amount of time determined by the system. The existence and activity of the elements, in turn, involves -- or consists of -- references to other elements and to themselves. These references, again, form the system. The system refers to itself via its elements; an element refers to itself via the system.

3

The most general term in which the intricacy of a system's existence can be put is the term "complexity". For the system, its environment is always more complex than itself so that it may have to build up defensive complexity in order to cope with the causal pressure it experiences from its environment. This slope of complexity between environment and system is the fundamental problem of systems theory. As the last reference point for functional analyses, it replaces old formulas such as *conservatio*, persistence, or self-preservation.[5] There are many different concepts of complexity,

[5] See Niklas *Luhmann*, Komplexität, in *Luhmann*, Soziologische Aufklärung 2, (Opladen: Westdeutscher Verlag, 2nd ed. 1982), pp.204-220 (211).

which I cannot review in this essay.[6] They are all similar with regard to their consequences: complexity enforces selection. For a complete understanding of complexity usually requires an infinite amount of time or space. If a system responds to complexity, it can either do nothing -- which is then precisely the way it responds -- or it responds (only) to **selected** aspects of the complexity. Since this general principle holds for the operations of a system, it also applies to the observations of an observer (who is himself a system). Under conditions of complexity, the continuation of observations reflects selectivity.

4

The problem with complexity, however, is not just a problem of selection. One can always select "something"; the difficulty is, rather, not to lose everything else different from what was selected. In other words, the world should not, via selection, shrink down to the one and only possibility the system chooses as its next immediate state. For most systems, the problem lies in the fact that, on the one hand, they have to reduce complexity in order to determine their immediate future without, on the other hand, leading them into a dead end. In a sense, complexity must be reduced and preserved at the same time. The selection of the next focus of attention should not diminish the potentiality of the future -- unless, of course, the system wants to avoid future.

[6] For discussion see e.g. Heinz R. *Pagel*'s third chapter in The Dreams of Reason: The Computer and the Rise of the Sciences of Complexity, (New York: Bantam Books, 1989), pp.54-70; George J. *Klir*, The Many Faces of Complexity, in *The United Nations University* (ed.),The Science and Practice of Complexity, (Tokyo: The UN University, 1985), pp.81-98; John A. *Casti*, Connectivity, Complexity, Catastrophe in Large-Scale Systems, (New York: John Wiley, 1979), especially pp.40-45, 97-125; John E. *Savage*, The Complexity of Computing, (New York: John Wiley, 1976), Martin D. *Davies*, Elaine J. *Weynker*, Computability, Complexity, and Languages, (New York: Academic Press, 1983).

5

As a common achievement of their co-evolution, **psychic** and **social** systems developed "meaning" as specific mode of representing complexity. Since those who ask for a definition of "meaning" implicitly confirm, by their very question, that they know what it is, I can restrict myself here to a brief description of what meaning **does**. Meaning supplies the actual state of the system with redundant possibilities of further experience and action so that actuality always appears as surrounded by possibilities. On the screen of the system, any focus of attention appears as one among many. Thus meaning links the actual and the possible via a set of references and thereby guarantees that those possibilities which were not selected are not totally eliminated. This activity involves self-reference also because the set of possibilities an actuality refers to always contains the possibility of its re-actualization (which therefore can be negated). The function of meaning is to identify all operations of a system as selections and, at the same time, to preserve the world from shrinking down to just one particular state.[7] Or, in still other words, meaning mediates between an actuality which is certain but unstable, and between a potentiality which is uncertain but stable.[8]

6

Meaning always refers to meaning. A possibility becomes actuality only if it refers to further possibilities; nothing has meaning in itself. The totality of all those references is referred to as "world". The world is closed in the sense that meaning-based autopoiesis always presupposes meaning; any attempt by the system to leave its meaning world only expands this world. We cannot leave the meaningful world in

[7] One may say that, via meaning, psychic and social systems represent complexity as "fractal". On the concept of "fractals" see Benoit B. *Mandelbrot*, The Fractal Geometry of Nature, (San Francisco: Freeman, 1983), and Heinz-Otto *Peitgen*, Peter H. *Richter*, The Beauty of Fractals, (Berlin: Springer, 1986).

[8] On "meaning" see *Luhmann*, Soziale Systeme, op.cit., pp.92-147, and Niklas *Luhmann*, Meaning as Basic Concept, in Essays on Self-Reference, (New York: Columbia University Press), pp.21-79, and *Luhmann*, Complexity and Meaning, in Essays on Self-Reference, pp.80-85.

a meaningful way (*Luhmann*). The world is open in the sense that the referring from meaning to meaning never comes to an end (as long as the system exists). In fact, due to its circularity, meaning continuously constitutes the infinite openness of the world -- the ultimate horizon of accessible possibilities. Systems which process self-reference and complexity by means of meaning do not dispose of any other instrument that could fulfil the same purpose. For those systems, everything is given as meaning. Their environments are -- or, if you will, **have** -- meaning, the systems' boundaries are meaning boundaries, and their elements and structures, too, are part of the systems' meaning worlds. As a consequence, the system becomes able to relate all these entities.

7

In short: psychic and social systems build up an internal model -- the world -- of what is important for those systems. This internal representation may be highly dynamic: the world moves as the system's operations move and thus remains inaccessible -- infinite -- in its totality. The theory of autopoiesis presupposes a strict differentiation of living, psychic and social systems and, on the other hand, identifies autopoiesis as their common characteristic. In this scheme, their meaning-based operation is what differentiates psychic and social systems from living (organic) systems.[9] For the investigation of social and psychic systems, meaning implies the inadequacy of concepts of evolution which are primarily based on the idea of "external selection" and adaption. Meaning-based systems evolve according to a specific internal criteria: compatibility with their meaning world.[10] In fact, the self-referentially closed meaning-based operation of those systems implies that their environments do

[9] On the evolution of this differentiation see Erhard *Oeser*, Psychozoikum: Evolution und Mechanismus der menschlichen Erkenntnisfähigkeit, (Berlin, Hamburg: Paul Parey, 1987), and also Gerhard *Roth*, Die Entwicklung kognitiver Selbstreferentialität im menschlichen Gehirn, in Dirk *Baecker*, Jürgen *Markowitz*, Rudolf *Stichweh*, Hartmann *Tyrell*, Helmut *Willke* (eds.), Theorie als Passion, op.cit., pp.394-422.

[10] They share, then, certain characteristics with what Heinz *von Foerster* calls "non-trivial machines". See Heinz *von Foerster*, Principles of Self-Organization -- In a Socio-Managerial Context, in Hans *Ulrich*, Gilbert J.B. *Probst*, Self-Organization and Management of Social Systems, (Berlin: Springer, 1984), pp.2-24.

not have direct causal access to the systems without the systems' concurrence. It may be helpful to illustrate this relation between system and environment with a metaphor. Imagine someone dreaming that he prepares a dinner for his girlfriend and himself at a lovely summer evening. He sees himself cooking, laying the table, lighting the candles, and then, eventually, his alarm clock rings. But, instead of waking him up, the noise is incorporated into the dream's meaning world as the longed for doorbell: his loved one has arrived and the dinner can begin (and the dream can continue).[11] In particular: the noise will be noticed only if the dream is able to assign meaning to it. Thus, for meaning-based systems, openness is a result of the system's activity; it is, if you will, an **achievement** -- which nevertheless may have disastrous consequences for the system. Psychic and social systems reproduce themselves by submitting themselves to this self-reproduced selectivity. Being a system is, among other things, this self-referentially closed reproduction of openness. And closure at the level of the system's self-referential operation is a precondition of openness. The environment can only provide the noise which the system may (or may not) take as disturbances or irritations around which order is being built. Thus the environment may offer impulses but is not able to determine their effects on the system.

8

Psychic and social systems are distinguished according to whether they use **consciousness** or **communication** as modes of meaning-based reproduction. Meaning can fit into a sequence of references which is based on and oriented towards sensation and which surfaces as consciousness; meaning can also fit into a sequence of references which process a distinction between information and utterance and which "understand" this distinction made in earlier references.[12] In the latter case, the

[11] This is the way Gunther *Teubner* illustrated system-environment relations in his seminar "Autopoiesis in Law and Politics" (Fall 1991) at the EUI.

[12] On communication see Niklas *Luhmann*, Soziale Systeme, op.cit., pp.191-241; *Luhmann*, Die Unwahrscheinlichkeit der Kommunikation, in *Luhmann*, Soziologische Aufklärung 3, (Opladen: Westdeutscher Verlag, 1981), pp.67-80; *Luhmann*, The Autopoiesis of Social Systems, op.cit., pp.174-176.

sequence of references surfaces as communication. The choice between the two modes of operation is not to be made at single events. Rather, due to the self-referential constitution of meaning, consciousness will always refer to consciousness and communication to communication. Any consciousness which tries to understand the sharp distinction between these kinds of operation faces the problem that it cannot operate beyond consciousness: it can only understand communication as communication consciously pursued by consciousness in order to make further consciousness possible. However, communication is possible only as an event that occurs beyond the closure of consciousness. As such, it must be, in some sense, **autonomous**.

9

Two (or more) autopoietic systems can co-evolve via **structural coupling**. The term always refers to a relation between systems with each of them belonging to the other's environment. Structural coupling means that a system makes its own complexity available for the constitution of another system **and vice versa**. For example, a system is constituted by using other systems as undecomposable elements; and for these elements, in turn, the participation in this constitution is a precondition of their existence as systems.[13] Structural coupling is not a causal relationship in that causal schemes presuppose a difference in time. Co-evolution, however, always means simultaneous evolution. Systems which are coupled in this way do not simply produce similar things. Rather the structural coupling is essentially involved in the very constitution of the participating systems. Even if structurally

[13] The Nitrogen cycle -- or any other ecosystemic cycle -- may serve here as an example of structural coupling. In the Nitrogen cycle, plants take up nitrate from the soil and convert it into amino acids and nucleotides, then to proteins and nucleic acids. Decomposers hydrolyze these polymers, then deaminate the monomers, releasing ammonia. The latter serves as an energy source for Nitrosomas bacteria which oxidize it to nitrite, which is in turn oxidized by Nitrobacter to nitrate, closing the ecosystemic cycle. Note that while each of these microbes is in business for itself -- exploiting energy sources for survival and reproduction --, it is the ecosystemic cycle to which they all contribute that makes their niches of existence possible. The cycle would not exist without the complexities of the plants and bacteria; in turn, none of the latter autopoietic systems could exist without the complexity of the entire cycle. See Jeffrey S. *Wicken*, Evolution, Thermodynamics, and Information, (New York: Oxford University Press, 1987), pp.136-137.

coupled systems use the same elements, those common elements -- although identical as events -- still have different meanings, different histories, and different futures in different systems.

10

Structural coupling is also the condition of the co-evolution of psychic and social systems. Psychic systems presuppose social systems in their environment and vice versa. In particular, psychic systems do not appear within social systems but within their environments. Ironically, it is precisely this "exclusion" of the psychic which shows that autopoiesis takes the individual seriously -- perhaps more so than other approaches. For the environment is for a system always the part of the world with the greater complexity. In fact, to conceptualize psychic systems as parts of the environments of social systems is to **acknowledge** the former's complexity.[14] From the perspective of a social system, the complexity of a psychic system always appears as contingency.[15] Structurally coupled psychic and social systems realize within themselves the others' differences between system and environment without being divided in the same way. The consciousness of a psychic system produces and contains descriptions of the boundaries of the social systems it is coupled with. Yet precisely because these boundaries are not its own boundaries, the psychic system is able to ignore them and thereby to change the social systems' boundaries. Communication, in turn, must always take into account in how far it binds and fascinates psychic systems. Thus the boundaries of psychic systems are also represented in the domain of communication. **Language** usually guarantees sufficient

[14] For the theory design as presented here, consciousness is not less but indeed more involved in communication -- but not as a cause-setting subject. Those who really wanted to understand world politics in terms of what psychic systems say and do would somehow have to specify which of the currently 5 billion psychic systems have more competence than others -- and this because of those system's own capabilities and not because of positions which the communicative system society assigns to them. On the distinction and relation between consciousness and communication see also *Luhmann*, Die Wissenschaft der Gesellschaft, (Frankfurt a.M.: Suhrkamp, 1990), pp.26,38,41,51,282.

[15] See Niklas *Luhmann*, Interpenetration -- Zum Verhältnis personaler und sozialer Systeme, in *Luhmann*, Soziologische Aufklärung 3, op.cit., pp.151-169.

fascination of psychic systems; it automatizes the structural coupling between psychic and social systems.

11

It is important to remember that meaning-based systems observe what they observe through their meaning-worlds. This gives systems the opportunity to asymmetrize their self-reference by representing circularity, symmetry and infinity as linearity, asymmetry and finiteness respectively -- by making mistakes, if you will. Quasi as artificially straightened lines, the system may introduce asymmetries into its meaning world and thereby -- perhaps unwillingly or imperfectly -- give direction to its autopoiesis. It may identify goals and purposes in its meaning world and in this way get out of the paralysing tautology of its self-reference just as Münchhausen pulled himself out of a swamp by his own hairs. Most important, the system may arrive at a **self-description**, i.e. it may integrate itself into its meaning world and thus establish a notion of a **self**. It may then find guidance for further autopoiesis precisely in this self-produced self-description and evolve in accordance with what it believes it is. Self-descriptions open all kinds of **new** evolutionary pathways. A system may find orientation in its self-description. It may obtain greater coherence and thus become able to undergo sudden and total changes. It may even externalize its unity, take it as a given and, on that assumption, build up more and more internal complexity. It may problematize its own being or regard itself as contingent. For a self-observing system, it finally becomes possible to assign meaning to what it regards as its history, and so on. There is no necessity behind those developments even if the system observes itself. It should be clear, though, that, once the system enters its meaning world, the system's complexity may eventually increase sharply. However, this is not to say that self-descriptions are always desirable achievements. Asymmetries only occur in the system's meaning world. As such, they are, however camouflaged, results of self-referential processes. In the following, I will distinguish **experience** and **action**

depending on whether a system asymmetrizes its self-reference by assigning causality to its environment or to itself respectively.[16]

12

As part of its self-steering, communication often employs **binary codes** in order to discriminate previous communication. Binary codes are qualitative, asymmetric schemes which structure communication depending on previous communication. For example, a communication can be true or false, legal or illegal, and even good or bad -- and communication continues accordingly! Binary codes need not be binary in the sense that the negation of one value automatically generates the other and vice versa. A binary code may offer a continuous line of evaluations but it will always be a line, i.e. one-dimensional with only two directions of evaluations. Binary codes exclude third possibilities. Their functioning requires that access to the unity behind the dichotomy they establish is strictly limited to certain exceptional situations.[17] Codes are **asymmetric** in the sense that one of their two sides -- e.g. "true" -- guarantees that communication can simply follow up whereas the other side -- "false" -- forces communication to reflect upon where else it may find the "right" place to link up. It is, then, only on the "negative" side of the code where the code re-enters again and again until something is discriminated as "positive" and allows, if you will, "business as usual".[18]

13

Binary codes are arbitrary: everything could be "true" or "false", "legal" or "illegal", "good" and "bad". They may have, then, a catalytic function: something must

[16] See Niklas *Luhmann*, Erleben und Handeln, in *Luhmann*, Soziologische Aufklärung 3, op.cit., pp.67-80.

[17] See Niklas *Luhmann*, Selbstreferenz und Teleologie in gesellschaftstheoretischer Perspektive, in *Luhmann*, Gesellschaftsstruktur und Semantik 2, (Frankfurt a.M.: Suhrkamp, 1981), pp.9-44.

[18] On binary codes see also *Luhmann*, Die Wissenschaft der Gesellschaft, op.cit., pp.167-271.

be done in order to remove the arbitrariness! The code's arbitrariness is aimed at its removal and thus provokes more and more communication about whether other communication is "true", "legal" or "good". Once the communication using the code has become sufficiently complex, it may eventually exist on its own and independent from the original context of its emergence. In this way, codes promote the differentiation of social systems. For example, the social system **science** is made up precisely of those communications which employ the code true/false; the **law** system of those employing the code legal/illegal, and so on.[19] The function of the emerging systems is to distribute, manage and discharge the codes' arbitrariness. Thus, functional differentiation goes hand in hand with semantic differentiation. Note that this does **not** lead to an hierarchy of systems with one operating in another like Russian dolls. The fully differentiated "subsystems" will regard the communicative context within which they emerged as part of their environments. Functional differentiation is more (or something else) than merely an internal partition of systems! Furthermore, once the system or "subsystem" established itself in correspondence with a code, it profits from the code's indifference. For the code itself does not determine what is positive or negative. It requires **programs** to specify how to use the code. Yet, these programs -- theories, beliefs -- fail on their own, independently of the code. And the greater the fluctuation and demise of the programs, the more stable the code will appear against this background of catastrophes. In the extreme, the code will be taken as a given so that the corresponding subsystem's existence is secure whatever it produces. For example, scientific progress produces problems whose solutions require more scientific progress; and the identification of both problems and solutions is again a scientific venture.

[19] See Niklas *Luhmann*, Die Wissenschaft der Gesellschaft, op.cit., *Luhmann*, Die Wirtschaft der Gesellschaft, (Frankfurt a.M.: Suhrkamp, 1988), and *Luhmann*, Das Recht der Gesellschaft, (Frankfurt a.M.: Suhrkamp, forthcoming), for systematic treatments of specific functional subsystems of society.

## Part II: Undecidability and the Dynamics of Truthfulness

1

In the following, the term (world) **society** denotes the totality of all communication. The term as such is purely technical, but it allows me to ask an interesting question: Is society a social system? In fact, I do not intend to answer this question, but merely to study the consequences of attempts to answer it. For the question is tricky. For any other set of communications, it is in principle possible to denote the set as a social system from outside the set. In other words, one may identify these sets as social systems even though they do not describe themselves as social systems. Self-observation and self-description, i.e. the integration of the system's unity in its meaning world is **not** a necessary requirement of social autopoiesis. Society, however, is peculiar: any claim that society forms a social system is part of society. As the totality of all communication, society includes all communication about society. **Hence, society can exist as a social system only on the basis of self-observation and self-description.** Society can only inaugurate itself as a system by determining what it is, by assigning meaning to itself.

2

But how can society identify itself? Does society have an **intrinsic** ability to establish truth about itself? In other words, is it possible for society to arrive at a self-description which captures society's existence in terms of truth? Can it, in this way, ever be sure of its identity? Or, in still other words, does society have an intrinsic ability to compare and assess some kind of "appropriateness" of the different self-descriptions in a logically closed way which cannot be doubted? Clearly, if such an ability existed, society's efforts could be guided by hopes (or fears) of **approximation**. There would be, then, an intrinsically preferred direction, a teleology, behind the society's evolution -- at least as long as it looks for a final truth behind its existence.

Behind all these questions is -- somewhat hidden but, I hope, still recognizable -- the question of the possibility of normativity.

3

At the level of theory, these questions are first of all questions of logic -- and not of morality. In fact, the previous questions bear a structural correspondence to what logicians call the "Halting problem for Turing machines". I will now briefly explain what this problem consists of. A Turing machine is a formal model of the process of computation or, in other words, of sequences of deterministic cause-effect relationships.[20] In particular, although it is often taken as the archetype of modern computers, a Turing machine is not a machine; it is a conceptualization of, if you will, a particular way of thinking or of processing information via sequences of cause-effect links. The Halting problem occurs in the context of prediction: Is there a general and effective decision procedure based on deterministic cause-effect relations which can decide, for any given Turing machine, whether this machine stops its operations at some point or whether it enters an infinite loop? The problem is, then, whether there is a general method which predicts fundamental aspects of the final qualitative behaviours of Turing machines, i.e. whether there is a method to establish truth about future operations of all Turing machines. If, however, all deterministic procedures can be modelled as a Turing machine, the same question can be put in a much shorter way, which also reveals its self-reference: Is there a Turing machine which can predict the final behaviours of all Turing machines?

[20] See Alan M. *Turing*, On Computable Numbers with an Application to the Entscheidungsproblem, *Proceedings of the London Mathematical Society*, Series 2, Vol.42 (1936-37), pp.230-267, (a correction, ibid., Vol.43 (1937), pp.544-546). A useful collection of the original papers of Kurt *Gödel*, Alonzo *Church*, Stephen C. *Kleene*, Emil *Post*, and Alan M. *Turing* on undecidable propositions is Martin D. *Davis*, The Undecidable, (New York: Raven Press, 1965). See also Hartley *Rogers* Jr., Theory of Recursive Functions and Effective Computability, (New York: McGraw-Hill, 1967).

In the same paper in which he introduced his "machines", Alan M. Turing provided the correct negative answer to the problem. He was able to rigorously prove that, for logical reasons, a Turing machine which would decide whether or not any given Turing machine would ever halt cannot exist. This fact is usually referred to as the **undecidability of the Halting problem**. The proof is elegant, subtle and too formal to be included in this paper.[21] Before I begin to translate this result into a social context, I will again try to clarify its meaning. If a certain class of problems is undecidable, this does not mean that all problems in this class are unsolvable. In fact, in many cases it is not very difficult to decide whether or not a certain Turing machine will halt. The point is rather that, in general, the answer for one machine is **logically independent** of the answer for another machine. In general, it is impossible to derive one answer from another. Undecidability implies that a logic which provides answers to some of the problems cannot be generalized to a solution for the entire class of problems under examination. Thus, undecidable questions are those which concern phenomena which, for reasons of logic, do not allow generalization. Undecidability is, if you will, the most fundamental justification of heuristics or, in other words, rules of thumb.[22] Thus, undecidability becomes acute as a problem only if one looks for more or something else -- e.g. for intrinsic, final procedures which are still logically honest. In particular: it is always possible to decide the undecidable. Undecidability only implies that a decision cannot be logically derived from the undecidable and thus must be based on criteria external to the undecidable phenomena.

5

Undecidability is the reason why it is not possible for communication to logically derive truth about the totality of all communications from single communications.

[21] For a quite readable account of *Turing's* proof see Roger *Penrose*, The Emperor's New Mind, (New York: Oxford University Press, 1989), pp.30-73.

[22] See John *von Neumann*, Zur Hilbertschen Beweistheorie, in A.H. *Taub* (ed.), John von Neumann: Collected Works, vol.1, (Oxford: Pergamon Press, 1961), pp.256-300 (256-266), (originally published in 1927).

Society does not have an intrinsic access to an identity by means of calculations of truth. For logical reasons, communication employing the binary code true/false is not able to cover the totality of all communication and is thus not able to identify eventual common aspects of those communications. As a corollary, we observe that a theory of society either does not exist or must start from this observation. Again: due to society's strict closure at the level of its operation -- communication --, there is no intrinsic basis within society upon which truth about this society could be established.[23] This result also touches the question of whether society forms a social system -- the answer is neither No nor Yes. **Society is fundamentally unknown to itself.** The only moment where self-knowledge could, in principle, capture society's identity is the moment of its dissolution.[24]

6

I anticipate some scepticism with regard to the transfer of the notion of undecidability from Turing machines to social systems. A great amount of literature has been produced which critically discusses the scope of Turing's result.[25] In a sense, this discussion is beside the point. It is important to see that undecidability does not occur independently of a specific question and an expectation as to how it is to be answered. Thus, nothing is in itself undecidable. Undecidability means, again, that a question -- which must be asked -- cannot be answered in a certain way -- which must be chosen. Society can encounter undecidability only if it problematizes

[23] On logical paradoxes in the context of self-organizing systems see also Klaus *Kornwachs*, Walter *von Lucadou*, Komplexe Systeme, in Klaus *Kornwachs* (ed.), Offenheit - Zeitlichkeit - Komplexität: Zur Theorie der Offenen Systeme, (Frankfurt a.M.: Campus, 1984), pp.110-165.

[24] Due to the self-referential closure of consciousness, similar results also hold for a psychic system trying to establish truth about itself. Compare this view, then, to common beliefs claiming that shortly before one's death or in the moment of death, one sees his entire life as a kind of quick-motion picture -- indicating that, at last, a psychic system is able in this moment to obtain complete self-knowledge.

[25] For an overview of common interpretations see Douglas R. *Hofstädter*, Gödel, Escher, Bach: An Eternal Golden Braid, (London: Penguin Books, 1980), pp.561-575. For a short discussion of some of their philosophical ramifications see Robert *Rosen*, Effective Processes and Natural Law, in Rolf *Herken* (ed.), The Universal Turing Machine: A Half-Century Survey, (New York: Oxford University Press, 1988), pp.523-537.

its identity, its entirety in terms of truth. The justification for the use of the concept of undecidability lies, then, in the questions it answers -- not in society or in the social systems. **Therefore**, undecidability must be treated as an **emergent** social phenomenon. Society produces undecidability simultaneously with the questions and expectations it raises about itself. Accordingly, the function of undecidability must be seen in correspondence with the questions producing it. Whereas an however proclaimed societal identity may structure and guide the autopoiesis of all social systems within society for some time, the undecidability of any societal identity prevents society from producing its own end in form of a **predictable** recurrent procedure or static situation. For if things were decidable, why should there be a need for social autopoiesis, for psychic autopoiesis, for evolution, for change, for continuity? Society was not set up, it seems, in order to produce a consensus. It is, in contrast, precisely the undecidability and hence unpredictability of the series of society's self-descriptions which provides an incentive for its further existence. The infinite task of self-identification is autocatalytic and therefore useful: for society, the only possible answer to the question of what society should be is ... to be society!

7

**If** society commits itself -- for whatever (emergent) reasons -- to the idea of a truthful self-description providing an identity which remains valid over time, the search for this truth about the self introduces a specific dynamics to the evolution of society -- the dynamics of truthfulness. For a society which begins to create truth about itself in the expectation that there **is** such a time-less truth, undecidability becomes the universal, undirected background dynamics behind its evolution. Undecidability is what makes the search for truth about the self autocatalytic: the discovery that the self is unknown to itself only makes further self-observation necessary. As a permanent provocation, a potential for change is from then on built into the logic of the system. In a sense, it is this undecidability which puts "the recalcitrance of the will and the

intransigence of freedom at the heart of the power relationship" (*Foucault*)[26] -- for, under conditions of undecidability, the imposition of meaning at **no** point becomes a closed affair. The imposition of a societal truth becomes a question of evolutionary success in a competition for truth -- and not a question of logical consistency.

8

Once society embarks on the dynamics of truthfulness, its evolution will more or less follow the principles of **morphogenesis** and, as a consequence, can be described as an alternation of **attractors** and **bifurcations**.[27] If, for some reason, society manages to remain loyal to a specific self-description or to a certain aspect of its self-descriptions, I shall refer to this description or aspect as an "attractor".[28] For a self-description to become an attractor, it is not sufficient that communication is attracted to it. Due to the co-evolution of society and all (!) psychic systems, a self-description of society must also somehow convince or attract the autopoietic reproduction of psychic systems. In other words, it must shape a subjectivity which will then foster its own validity. Whenever an attractor loses its appeal for the truthful society, it must be replaced by another. For many reasons, the removal of one and insertion of another self-description will require time. During the in-between periods, society is in a precarious situation. It must somehow select its identity and yet, as there is no guiding self-description, it may have no control over what is being selected. Moreover, since society in these moments expects its new identity as a truth which it only must reveal rather than produce, it may condemn itself to inactivity. It must wait

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[26] The quote is taken from Michel *Foucault*, The Subject and Power, in Hubert L. *Dreyfus*, Paul *Rabinow*, Michel Foucault: Beyond Structuralism and Hermeneutics, (Chicago: The Chicago University Press, 1983), pp.208-226.

[27] The standard reference on morphogenesis is René *Thom*, Structural Stability and Morphogenesis, (Reading, MA: Benjamin, 1975).

[28] The term is taken from dynamical systems theory. For details see e.g. J.M.T. *Thompson*, H.B. *Stewart*, Nonlinear Dynamics and Chaos, (New York: John Wiley, 1987), Rüdiger *Seydel*, From Equilibrium to Chaos, (New York: Elsevier, 1988), Robert L. *Devaney*, An Introduction to Chaotic Dynamical Systems, (Redwood City, CA: Addison-Wesley, 2nd ed. 1989), Neil *Rasband*, Chaotic Dynamics of Nonlinear Systems, (New York: John Wiley, 1990).

until it is able to invent a self-description which describes itself as a necessity. The strangeness of this procedure cannot last for too long. Society and the social systems within it will become oversensitive to irritations from within and outside, especially to the noise generated by psychic systems -- after all, everything may be an indicator of the societal truth. And if all this lasts for too long and if the continuing uncertainty threatens to question the entire manoeuvre, society may eventually generate self-descriptions which claim that currently no self-description or a multiplicity of those exists. Nevertheless, in its search for truth, society may produce more coherence than by actually using a self-description. These inherently unstable situations I call "bifurcations".[29] It is the logic of bifurcations, if you will, that society has no control over its future despite of all efforts. In fact, the more society exerts itself for truth, and the more carefully it observes what it thinks is going on, the more critically dependent it becomes upon minor differences. Due to this procedure, the new self-description can be of almost infinite unlikelihood. And in a strike of ingenuity, society may find reassurance precisely in its improbability. If the chance of a monkey typing *Shakespeare*'s "Hamlet" on a typewriter by accident is smaller than one divided by a number greater than the number of particles in the universe,[30] then there must be something to social evolution!

9

The search for a true identity is a delicate business. It can all too easily lead to disappointments, i.e. to revelations of aspects of the self, which -- however unnecessarily -- appear on the society's screen as defects. Any kind of change bears the danger of disappointments: something that was labelled as truth may turn out as false. However, this need not cause problems. Society can find reassurance in the

[29] On bifurcations see also Gregoire *Nicolis*, Ilya *Prigogine*, Exploring Complexity, (New York: Freeman, 1989), pp.71-75, 164-171; and Ilya *Prigogine*, Science, Civilization and Democracy, in *Futures*, Vol.18, No.4 (August 1986), pp.493-507.

[30] This calculation is made up in William *Poundstone*, The Recursive Universe: Cosmic Complexity and the Limits of Scientific Knowledge, (New York: Oxford University Press, 1987), pp.22-23.

discovery of mistakes. The discovery is still a discovery and as such suggests progress! After all, one can be truthful in the observation of falseness. However, when a truthful society arrives at a new self-description, it must somehow convince itself that the new truth, as truth, must have been there all the time -- even before it was produced and then revealed. A society (or a social system) which observes itself in terms of truth **needs** a meaningful history! It needs a history which connects current with (all!) earlier self-descriptions. It needs causality. And in accordance with this need, society will in advance direct communications on routes which it regards as compatible with what it perceives as its history. Society will see itself as forced to "learn" from its history. And learning from history is possible only if history is not seen as contingent but as necessary, as a given to which society must adapt. If, in this way, history is to be a pool of causality, society will have to accept it as an expression of the external truth it is looking for.

10

One may ask: Can the search for truth go on forever once it started? Is it possible to delineate different stages it will go through? What are the likely results of the dynamics of truthfulness? I will start my brief speculations by introducing what systems theorists call **the role of progression towards the most resistant form**.[31] Imagine, for a moment, that the storage cells of a computer are filled randomly with digits between one and nine. Imagine further that a dynamic law is introduced whereby pairs of neighbouring digits are multiplied together and then replaced by the final digits of their various products. What will be the result of this process? Although microscopically random, the evolution is macroscopically predictable: eventually the process will generate a zero in one of the cells. And further multiplications with neighbouring cells will generate even more zeros until indeed all cells are filled with zeros. This example illustrates a phenomenon of extreme generality. Under a fixed determinate law, a process will **automatically** select those operands which are

[31] For the following see W.R. *Ashby*, Principles of the Self-Organizing System, in H. *von Foerster*, G. *Zopf* (eds.), Principles of Self-Organization, (New York: Pergamon Press, 1962), pp.255-278 (272).

**specially resistant** to the change-making tendency. After all, the zeros are uniquely resistant to change by multiplication. This general rule of progression towards the most resistant form is not as surprising as it may seem. For whatever lasting pattern a process produces -- even if only temporarily -- it must be resistant to the underlying dynamics to some degree since it would otherwise undergo further changes and would not become observable in the first place. Now I can rephrase the questions posed at the beginning of this section as follows: what would be the most resistant form society can arrive at under the dynamics of truthfulness?

11

Under conditions of undecidability, it seems likely that a truthful society will have to generalize the truth of its history from more and more successive self-descriptions. As society evolves, it may have to extract a general truth out of an increasingly diverse history. Under those circumstances, the most resistant form which can evolve is a truth which claims the impossibility of truth. The law of history is that there are no laws! It finally becomes decidable that things are undecidable. Further disappointments can easily be interpreted as additional evidence for this most abstract truth that can be invented. All this is not as paradoxical as it may seem. As history, undecidability becomes a topic for communication not as an emergent phenomenon created in a search for truth, but as truth itself, as a given, as something on must accept, one must adapt to. As a consequence, the discovery of undecidability at the level of history does not as yet seriously interrupt the dynamics of truthfulness. Society can begin to build up order precisely around the certainty of uncertainty. Society's self-descriptions will begin to focus on, say, the impossibility of normative thinking, cultural pluralism, self-determination (!), diversity, democracy, etc. Moreover, in a truthful society which excludes the possibility of a truthful self-description, every actually emerging self-description must be seen as a potential danger. Society will define and create its problems and threats accordingly, will respond to them and find reassurance in mastering them. The resistance of this self-renouncing truth against the dynamics of truthfulness lies precisely in its apparent paradox: the recurrence, failure and

disappearance of other truth claims in form of distinct self-descriptions only confirms the truth.

12

At first, the law of the absence of laws is a truth just like any other truth. It introduces a difference into society between truthful and untruthful communications and sorts out the latter as defective. In particular, there is little reason to assume that the imposition of this form of truth requires less violence than other forms. And yet, the self-renouncing truth is peculiar. If society arrives at a point where it cultivates undecidability as truth, it puts itself in a delicate tension. On the one hand, the truth of undecidability is as undecidable as any other self-description of society and thus remains vulnerable. It cannot justify itself in a logically closed way -- in fact, this is **the** condition of its possibility! Yet on the other hand, the externalization of undecidability as truth can only be the final attempt to elude the awareness that **any** societal truth is self-imposed. In other words, there does not seem to be a fiction beyond the fiction of truth. Any challenge to this last resort of societal truth is therefore existential in the most fundamental sense. The dilemma is, then, that the persistence of a self-renouncing truth depends on conditions which also expose it to dangers to which it is likely to respond in dramatic ways. Depending on the extent to which social (and psychic) autopoiesis operates in terms of truth, society might even prefer to annihilate itself with nuclear weapons rather than give up its truthfulness. And this theme may finally lead over also to an interpretation of most recent events -- the Cold War, its end, and its results.

## Part III: The Autopoiesis of the Cold War

1

Society in search for truth about itself, hoping that a final, ultimate societal truth could provide guidance and somehow ease the burden of the closure of its fundamental self-reference, is finally guided -- perhaps without being aware of it -- precisely by this search and this hope. In light of these expectations, the likely encounter of undecidability must lead to disappointments which only intensify efforts to arrive at truthfulness: if a societal self-description turned out to be wrong, society must be more careful, more attentive, more observant in the next attempt. And yet the shifts may also be abrupt, as if the last failure only revealed what the new truth **must** be. This, in a nutshell, is the picture of social evolution I depicted on the previous pages. The dynamics of truthfulness, I explained, has its own logic and consequences, it defines its most resistant form and is likely to generate it. The Cold War and its end may provide evidence of this dynamics -- I will come back to this -- but there is another question I should ask first: How was this dynamics introduced?

2

This is a very deep question. It is, if you will, **the** question about the origins of social evolution. It is, no doubt, much too big for this paper; only a few authors ever arrived at a **systematic** treatment of this question.[32] So I will leave it here as **the** big question-mark and take it as a strength of the previously introduced framework that it is indeed able to pose the question. All I want to do now is to indicate how early notions of the "state" reflected the (already ongoing) dynamics of a truthful society.

[32] Friedrich *Nietzsche* is one of them; in fact, this was his theme. But he needed quite a long time before he understood that this was his question-mark. See his Zur Genealogie der Moral.

In 15th century Europe, the state, like Latin *status*, at first denoted nothing but a stock-taking of the actual condition and present situation.[33] The concepts that evolved in the 16th and 17th century around the *raison d'état* referred to a form of government which was reflexive in that it emphasized government **in accordance** with the "state", i.e. with what was to be governed.[34] Constitutive for the art of government was therefore also the accumulation and use of knowledge of the "state". In this sense, the "art" of government became a "science" -- nicely illustrated by the *Polizeiwissenschaft* which emerged on German territories after the Thirty Years War. In an attempt to impose the known upon the unknown, the developing art of government centred around the economy, i.e. the correct way of managing individuals, goods and wealth within the family. The question at stake was how to introduce the meticulous attention of the father towards his family into the political practice of managing the "state". But this also meant that the finality of government resided in the things it managed; and these "things" were not just territory and inhabitants but in fact men in their relations, their links, their wealth, resources, means of subsistence; and the territory with its specific qualities like, climate, irrigation, fertility. These "things" were also customs, habits, ways of acting, thinking; accidents and misfortunes such as famine, epidemics, death etc.[35] Government meant to engage in the handling of a new social complexity. It brought about administrative and governmental apparatuses, the science of the state -- "statistics" -- and soon found in the idea of the "population" the new centre of the economy. "Population", so the idea, now had its own truth irreducible to the dimension of the family.

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[33] See Niklas *Luhmann*, The "State" of the Political System, in *Luhmann*, Essays on Self-Reference, op.cit., pp.165-174.

[34] For this discussion see also Colin *Gordon*, Governmental Rationality: An Introduction, in Graham *Burchell*, Colin *Gordon*, Peter *Miller* (eds.), The Foucault Effect -- Studies in Governmentality, (Chicago, IL: The University of Chicago Press, 1991), pp.1-52.

[35] See Michel *Foucault*, Governmentality, ibid., pp.87-104 (92-93).

The attitude behind the "art" of government and the rise of the institutional state -- which first arose, then, in the form of absolutism -- can be interpreted as a response to the persistent confusion and suffering caused by religious and civil wars in Europe in the 16th century. One may say: in order to connect to the situation, the new attitude had to be based on the dynamics behind it -- the concern for truth; and in order to change the situation, the new attitude shifted the focus of this concern from external to internal references. In other words, the internally produced references to an external god were replaced by more or less open self-references; society tried to find orientation within itself. The emergence of Neostoicism reflected and nurtured the new intensity and dynamism founded strictly on reason.[36] The *raison d'état*, in other words, manifested the "detheologization" of politics -- not to be mistaken, of course, for a general move towards irreligion. No longer part of and subordinate to the divine, cosmo-theological order of the world, government now had its own rationality. All this, however, established a need for self-observation -- at the level of society as well as of single psychic systems. The semantic place for these self-descriptions of societies was the "state", which was to be governed according to rational principles which were seen as intrinsic to it. Government was still government according to truth, but the truth was to be found within society, i.e. within its self-descriptions, and could not be derived solely from divine laws. In a sense, government became a reflection on human (social) nature.[37] One may contemplate on whether and why the new art of government remained somewhat immobilized until perhaps the 18th century. However, what is important for the context of this paper is that, also at the level of society, a need for self-observation in terms of truth was part of the initial conditions of a growing concern about "international relations".[38]

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[36] Important: Gerhard *Oestreich*, Neostoicism and the Early Modern State, (ed. by Brigitta *Oestreich*, H.G. *Koenigsberger*, transl. by David *McLintock*), (Cambridge, England: Cambridge University Press, 1982).

[37] Interesting in this context also Albert O. *Hirschmann*, The Passions and the Interests, (Princeton, NJ: Princeton University Press, 1977).

[38] The end of the Thirty Years War with the Treaty of Westphalia is commonly regarded as the birth of the first modern "international system". At the time, the new map of Europe was considered as drawn for eternity (!). For a discussion see e.g. Kalevi J. *Holsti*, Peace and War: Armed Conflicts and International

5

The concern with government and statecraft evolved simultaneously as a consequence and cause of an emerging interest in the "truth" of human behaviour. A concern with truth which exceeded merely utilitarian use was built into the notion of government -- at least in Western cultures, I should add -- from the beginning. The semantic place for the now necessary societal self-descriptions was the "state". And yet, due to the undecidability of those self-descriptions, it was possible, if not likely that several societal truths were produced. Society continued to partition itself and now began to institutionalize this partition. Several "states" emerged, whose truth claims remain hidden behind the assumption that they all are, however different, "states". The subsequent differentiation of governmental and administrative apparatuses soon led to a semantic distinction between "state" and "society". For the called for reflexiveness of government reflected a need for a **functionally** differentiated subsystem that would govern society according to its presumably intrinsic regularities. The newly differentiated political systems -- now plural! -- soon encountered, no surprise, the self-reference behind those regularities as the paradox of self-limitation -- a paradox which is now a problem of the state as being distinct from society. The problem is discharged by the re-entry of society on the side of the state in form of the **constitution**, which now, in a sense, becomes the carrier of societal truth.[39]

6

The dynamics of the Cold War as the continuing dynamics of truthfulness, the persistence of the Cold War or, if you will, its "stability" as an expression and reflection of undecidability, and the outcome of the Cold War as an -- however temporal -- shift

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Order 1648-1989, (Cambridge, England: Cambridge University Press, 1991), especially pp.25-70.

[39] See also Niklas *Luhmann*, Staat und Politik: Zur Semantik der Selbstbeschreibung politischer Systeme, in *Luhmann*, Soziologische Aufklärung 4, (Opladen: Westdeutscher Verlag, 1987), pp.74-103, and *Luhmann*, Staat und Staatsräson im Übergang von traditionaler Herrschaft zu moderner Politik, in *Luhmann*, Gesellschaftsstruktur und Semantik 3, (Frankfurt a.M.: Suhrkamp, 1989), pp.65-148.

to the most resistant form under the prerogative of truthfulness: this, in very broad and simple terms, is what the Cold War looks like from the perspective of this essay. Of course, this interpretation can only serve as a starting point for a more detailed analysis; but this is its merit: it **is** a starting point.

7

At first, the Cold War was a self-description of society which saw itself evolving around or against another specific self-description -- communism. The Cold War was the result, then, of a self-observation of societal communication by means of the distinction communist/non-communist, which for all kinds of reasons was also represented by the binary code east/west. One of the many peculiarities of the Cold War is precisely this re-entry of the self-description into the self-description: in its self-description society encountered more self-descriptions. In a sense, it was this recursiveness that made the Cold War unique among society's self-descriptions at the time. Other themes, for example the North-South-conflict, did not evolve around societal self-descriptions. The North-South-conflict could all too easily be interpreted as a question of economic development and as such did not involve undecidability. If one really wanted, one could always do something about underdevelopment; yet the truth claim of communism could not be explained or argued away -- it remained there. Once society's self-observation observed two opposing self-descriptions, it seemed inevitable that both the search for truth and its undecidability would bring about a functionally differentiated social system that would somehow discharge, displace or simply administer the undecidable. After all, communication had to continue despite of society's unresolved identity.

8

The hypothesis is, then, that the dynamics of truthfulness responded to the observed inconsistency by introducing a binary code for a focused self-observation.

The use of the code and the autocatalytic effects of the undecidability of the distinction it made, defined a truly autopoietic social system -- the Cold War. And just as a thermostat models a world as a hot/cold world, the Cold War system modeled its world, however imperfectly, as an east/west world. What makes the Cold War interesting also with regard to the general theory of autopoietic systems is the symmetry of this code: the code re-entered on both sides. Both "communist" and "non-communist" communication were able to employ the code in their self-observation. The intensity of these procedures (McCarthyism!) may shed some light upon the dynamics of the system at large. I will refer to self-observing autopoietic systems employing symmetric codes as **self-similar** systems.[40] The term should hint at the consequences for the system's meaning world if it observes itself in terms of a symmetric code. For self-similar systems cannot escape from their code: whatever side of the code one picks and however deep one is to follow references from potentiality to potentiality, the possibility to process and assign meaning in terms of the code reappears. Self-similar systems are peculiar, I suggest, particularly with regard to the consequences of their dissolution. Social systems which observe themselves by means of an **a**symmetric code (see paragraph 12 in part I) may leave behind a body of information or knowledge consisting of communication that was assigned the positive value of the code. They accumulate "something" -- often without knowing what, why and how. In any case, these systems may have trajectories which may have meaning even if the code which produced it becomes discredited. In other words, these systems can be repaired if necessary. Self-similar systems, in contrast, dissolve at once with their code. They can hardly accumulate information which could provide guidance for further social autopoiesis and communication after the code's disappearance.

9

The simplicity of this definition of the Cold War as a system (!) which handled a specific form of societal self-observation will upset many historians. The Cold War,

[40] The term stems from Fractal Geometry. See endnote 7 for references.

they will say, was much more than that. From the outset, it involved economic, technological, strategic, legal and many other issues. One should not underestimate, though, the complexity of the theory design of autopoiesis. To say that the system was defined by its code communist/non-communist (or its semantic equivalents) only means that a communication attached itself to and thereby constituted the Cold War system by employing this code. Communication may well use more than one code, but will then, as a **single** event, exist in more than one system and accordingly will have more than one past and more than one future. For example, the discovery of nuclear fission, as a single event, occurred in the system of science, in the economic system, in the legal system and certainly in the Cold War system. It had, then, at least four pasts and four futures. The history of science, for example, will treat nuclear fission differently than a history of the Cold War. To present the Cold War as a consequence of self-observation through the glasses of a binary code does not as yet say much about the social complexity that accompanied its existence. One may as well reflect on the complexity of science or law -- brought about by "simple" binary codes and structural coupling.

10

Once society discovered two apparently incompatible self-descriptions within its self-description, the search for truth and its undecidability made the differentiation of an autopoietic system such as the Cold War almost inevitable for at least two reasons. First, the observed inconsistencies made further and focused self-observation necessary; and second, as long as the inconsistencies were handled by a specifically designed system, the general communication could go on under hypotheses of normality. Functional differentiation always has ambiguous consequences. It simultaneously increases and decreases society's dependence on the issues involved. Communication becomes independent in that it can communicate about everything while the functional subsystem takes care of society's unresolved identity. Yet, functional differentiation also implies a loss of redundancy -- which is particularly precarious if society's identity is at stake. Whatever the Cold War produced, society

was immediately and -- in the strongest sense of the word -- **existentially** affected.[41] Functional differentiation means that society bundles a specific form of communication and thus assigns it to a (sub-)system, whose existence and autopoietic closure from then on structures social autopoiesis and communication at large. It means that, to a certain extent, the communications of the newly functionally differentiated system cannot be compensated or dispersed any longer by related noise in society -- for all this noise has now become focused. Functionally differentiated systems, in short, do not have counterparts with the same function:

11

Mainstream literature tries to understand the "stability" and persistence of the Cold War in terms of the absence of war between the United States and the Soviet Union. My framework suggests a distinction between the "stability" of the Cold War as a social system and between the maintenance of a certain kind of peace in society. The first issue involves the autopoietic closure of the system and its meaning world; the second is much wider in scope. With regard to the first question -- the Cold War as a social system -- it is particularly striking that, although the system was not expected to last for so long, the sense of surprise was great when it finally came to an end. The question is: how did the system exclude the possibility of its negation? This question also concerns the internal systemic time, i.e. the system's time horizons. How did it, if it did, reflect on its future? How was the future present in the present? Or was it not? The system witnessed the uprising in Hungary in 1956, the spring in Prague in 1968; it witnessed events in Poland in the early 1980s, and still the possibility that similar events might at some point take place within the Soviet Union did not appear on the screen of the system until shortly before (after?) the events themselves.[42] From the perspective of this essay, this sense of surprise is not at all

[41] Note that the term "existential" here means something else than the survival of humans as organic and psychic systems.

[42] For a similar observation see Richard H. *Ullman*, Ending the Cold War, in *Foreign Policy*, No.72 (Fall 1988), pp.130-151.

surprising. Decisive, again, was the undecidability of the issues involved. First, undecidability is the reason why the re-entry of two self-descriptions into the self-description **is** a problem for the truthful society. And second, undecidability is the reason why it **remains** a problem despite of focused self-observation. A functional system which is supposed to (only) observe the undecidability can only reproduce the undecidability -- and this is, in a nutshell, the dynamics behind the autopoiesis of the Cold War. It could not **observe** beyond undecidability. In other words, within the logic of the Cold War, its end must be considered as illogical.

12

If one understands the outcome of the Cold War, the self-celebration of self-determination, as society's move towards the most resistant form under the prerogative of truthfulness, then it seems plausible that society will accompany this move by declaring it the end of history.[43] In fact, once truth retreated to its last resort and becomes self-renouncing, the truthful society does not have much choice in its claims. Since there is no fiction beyond the fiction of truth, the promotion of undecidability to the status of an attractor **must** be the end of history. And it seems likely that under these conditions the determination of the truthful society to defend its final truth will increase. The gigantic question-mark of history is whether it will succeed or for how long. Ironically, it is precisely this celebration of the end of history which reflects the continuity. It is precisely the "must" behind this end, or the very claim as such which reveals continuity.

13

This essay, to be sure, cannot do much more than to outline a perspective which puts the Cold War into context. I might have raised more questions than

[43] I am referring here, of course, to Francis *Fukuyama*, The End of History?, *National Interest*, No.16 (Summer 1989), pp.3-18.

answered -- but I keep wondering whether other frameworks ever arrive at the questions posed here. In particular: society is fundamentally unknown to itself, **but precisely this can be observed**. And the decisive question is then whether and how society deals with the question-mark of its identity. How does it, if it does, generate and select self-descriptions? With what consequences? A social theory or, for that matter, a theory of international relations must start with these questions -- not with optimism or pessimism.

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